Analysis on the Effective Development System of Curriculum Resources[*]

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Abstract: Development of curriculum resources is the key event in the new curriculum implementation. There are several vital means to promote the effective development of curriculum resources, including establishing systematic outlook of curriculum resources that is the trinity of persons, contents and processes; strengthening the entire exploitation of school-based curriculum development, school-based teaching research, school-based teachers' advanced study; setting up communicating, understanding, stimulating and safeguarding mechanism for effective development of curriculum resources.

Key words: curriculum resources; effective development; system frame; processing mechanism

Curriculum resources are an important conception of new curriculum reform of basic education, and development of curriculum resources is the key event in the new curriculum implementation. Curriculum Reform Outline of Basic Education (initial implementation) points out: "Develop actively and make use of the-out-of-curriculum resources and the-in-curriculum resources. Schools should take broad advantage of various social resources, such as libraries, museums, exhibition halls, technology halls, factories, villages, armies and institutions of science and research as well as plentiful natural resources."[1] Curriculum standard of each discipline makes corresponding regulations of development and making use of curriculum resources, from which we can see the valued degree of curriculum resources development in education decision in our nation. Nowadays, many schools engage in various activities to develop curriculum resources, surrounding such topics as school-based curriculum development, integrated practical activities curriculum development and effective teaching implementation. This paper intends to proceed from system frame analysis on curriculum resources, establish practical platform of effective development of curriculum resources, enquiry a certain amount mechanism of effective development of curriculum resources and hope to enlighten further deepening and development of new curriculum implementation.

1. Analysis on Curriculum Resources System

Setting up curriculum resources system frame helps developers to control curriculum resources entirely, which also can exploit flexibly and make effective use of curriculum resources, according to their needs and characteristics.

1.1 The Connotation of Curriculum Resources

Curriculum resources mean "resources of forming curriculum elements and direct necessary condition of

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[1] *Curriculum Reform Outline of Basic Education (Initial Implementation).* (2001)

implementing curriculum"[2]. In International Education Encyclopedia edited by Torsten Husen, curriculum resources are divided into objective resources, instructional activities resources, resources of organizing instructional activities, formulating evaluating scheme resources. In our nation, representative opinions of curriculum resources and types are as follows:

> Curriculum resources are separated into two kinds: material resources and conditional ones. The characteristic of material resources is that it acts on resources, and it can become material or source of curriculum, such as elements of knowledge, skills, experiences, activity patterns and methods, emotional attitudes, value outlooks and cultivating objectives. The characteristic of conditional curriculum resources is that they also act on curriculum, but they are not direct sources to form curriculum itself. However, conditional resources determine implementation range and level of curriculum to a great degree, such as elements of manpower, material resources, time, space, media, facilities, environment and knowledge situation of curriculum. In view of space, curriculum resources are separated into the-out-of-curriculum resources and the-in-curriculum resources, both of which include material and conditional resources.[3]

This kind of classification exists on the basis of functional features and dominating powers of curriculum resources, which provides us for the basic conception frame to understand curriculum resources. It also guides the development practice of curriculum resources.

Some scholars regard curriculum resources as a kind of ecology-like system. They think:

> This system is composed of five elements, which are persons, materials, tools, facilities and activities. These elements form some sources that have already existed in natural and social environment, and they can be utilized directly. These elements also form other sources, specially designed to achieve particular education or teaching goals. Ideas and activity patterns of people, physical and chemical features of materials, form and function of tools, shape, size, and utilization of facilities; way and place of activities all form plentiful resources that can be used for development. Thus, different curriculum resources exist in different places, schools and students families. Elements in this system continue to arrange information and capabilities between each other. Therefore, resources continue to arrange and combine to give out various unlimited resources form.[4]

This kind of research classification tries to analyze curriculum resources elements in view of system. It lays stress on the relationship of transformation and combination among elements. So, it provides helpful enlightenment to understand curriculum resources systematically.

Besides, according to different standards, scholars make respective classification of curriculum resources. For instance, curriculum resources are divided into natural and social curriculum resources on the basis of character; curriculum resources are separated into resources of script, material object, activity and information, according to their physical features and presenting ways; curriculum resources are classified as explicit curriculum and hidden curriculum in terms of existing patterns. However, none of them brings new vision for us, moreover, their meanings are not beyond the two researches of classification mentioned above.

1.2 The System Frame of Curriculum Resources

Curriculum resources are regarded as a systematic vision above, which enlightens us. It is a pity that the research doesn't reveal what kind of system the curriculum resources are. Although the research tells us five elements (persons, materials, tools, facilities, activities), it does not point out what the relationship and association among them is, nor it tells us how to connect with each other.

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[2] Gangping Wu. (2002). *School-based Curriculum Development*. Chengdu: Sichuan Educational Press: 146
[3] Gangping Wu. (2002). *School-based Curriculum Development*. Chengdu: Sichuan Educational Press: 147
[4] Zhaobing Duan. (2003). The Connotation and Effective Development of Curriculum Resources. *Curriculum, Teaching Material and Method*. Vol.3

We need the ideas of "connection", "fluctuation", "transformation" to make a research on curriculum resources, and to explain what kind of system the curriculum resources are. They also elaborate how many elements compose of curriculum resources and how to integrate closely to form an organic entirety. "If you do not know the entirety, then you will never understand part, likewise, if you do not know each part specifically, then you will never know the entirety."[5]

1.2.1 Curriculum resources are composed of series of "persons", including teachers, students, parents and professional groups, which are important curriculum resources

They make up the dimension of "persons" in curriculum resources. So-called "aesthetic education" begins from teachers' appearance; "moral education" starts from teachers' words and deeds,[6] meaning teachers themselves are the examples for students to study. Their behavior and emotion have educational effects on students. Students are the important power of education. Education will lose its foundation without students. Therefore, students are not only education objects, but also the important resources of education.[7] Interests, ability discrepancies, personal characters of students influence their communities through imitations and examples. Parents and social professional personages are important participants in school teaching. Curriculum resources elements of "persons" do coexist in educational arena, as Edgar MORIN said, "Everything itself is the result and cause, receiver and received object by power. Everything exists directly or indirectly through media."[8]

Among "persons"-dimension, teachers, who determine curriculum resources of "persons" to develop patterns and levels of educational function, are the key curriculum resource. As persons of curriculum resources, teachers are resource user and resource itself.

1.2.2 Curriculum resources include series of "contents", composed of elements of teaching materials, means/tools, facilities and culture, etc

Teaching materials censored by Teaching Materials Censored Commission are legal, most convenient and proper curriculum resources for teachers to educate and instruct. Moreover, network media, books and audio visual, places of interests, educational bases, museums, activity centers, and natural scenes are the derivate resources from direct or indirect combination, transformation of content resources elements.

Among all the "contents"-dimensional curriculum resources, teaching materials are the most important. Others exist or develop centering on the perfection of teaching materials.

1.2.3 Curriculum resources also include another important dimension of "processes", which happens during educating and teaching process

There are resources that can be utilized, including events, problems, communications, social lives, situations and seasons. In detail, social events and lives (phenomena) in the processing of social change, teaching and studying events during class instruction, accidental problems during instruction process, communication between students, communication between teachers and students, teaching situation/atmosphere, matching-to-season festival, and series of activities are designed by teachers, according to teaching objectives and combining students' experience and social lives. All belong to curriculum resources elements and resources of their transformation and combination in "processes" dimension. Therefore, resources cannot be called curriculum resources without

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[5] Edgar Morin, translated by Yizhuang Chen. (2004). *Complicated Theory and Education Problems, in Preface.* Beijing: Peking university Press

[6] Xiao Chuan. (2004). *True Feeling and Wisdom of Education.* Changsha: Yuelu Press: 135

[7] Shibing He & Jianmei Zhang. (2005). On the Development of School-based Curriculum Resources, *Education Explorations.* Vol.12

[8] Edgar Morin, translated by Yizhuang Chen. (2004). *Complicated Theory and Education Problems, in Preface.* Beijing: Peking University Press

"processes".

Among them, association is the key resource in "processes" dimension. Resources of events and problems are centered on it. Curriculum resources are untrue or unrealistic if without the process of association between teachers and students[9]. In another word, the real curriculum resources are those entering into communication between students and students, and leading to educational and instructional reality. We cannot see all the things as curriculum resources.

As three-dimensional curriculum resources, persons, contents and processes connect closely with each other. They form curriculum resources altogether (like following Figure 1). Each dimension has specific and relatively stable resources elements, which contact with each other to restrict the range and level of curriculum implementation. In the three dimensions, every element of each dimension connects closely with the other two elements of the other two dimensions to compose three-dimensional entirety. The curriculum resources system is a large resource system, composed of many three-dimensional entirety. A lot of cubes (three-dimensional entirety) make up the whole structure of curriculum resources system.
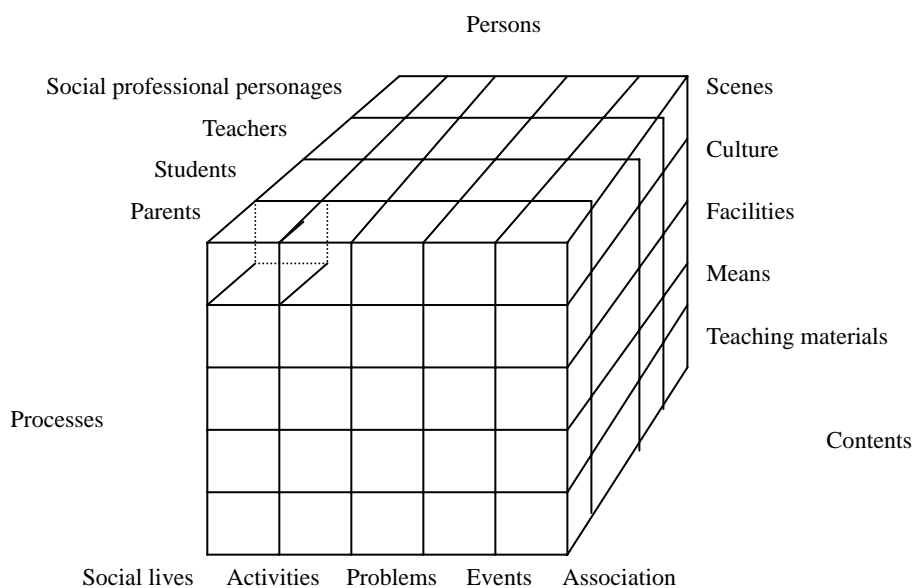

Figure 1   Curriculum Resources System

The three-dimensional curriculum resources system is composed of persons, contents and processes, among which persons-dimensional curriculum resources are subjective. Only those "contents"-dimensional curriculum resources found and used by "persons" can enter into educational teaching processes and make curriculum resources develop their functions. Curriculum resources of "processes"-dimension are generative, occurring under the direction of curriculum teaching objectives. They also occur during the associating process between "persons"-dimensional and "contents"-dimensional curriculum resources, which can be utilized in teaching process.

In the curriculum resources system of "persons", teachers continue to find, integrate and take advantage of curriculum resources to promote students to study effectively and continuously, according to curriculum

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[9] Here referring to association between students and teachers in broad sense, including association between students and teachers in school and educators out of school.

instructional objective. At the same time, they themselves could be curriculum resources to develop teachers' educational power of wisdom and character charming through indication and examples. Therefore, teachers are the most important persons in curriculum resources system, and they will determine the range and level of curriculum resources effective development.

2. Analysis on the Effective Development System of Curriculum Resources

Each element of curriculum resources system and their combination occur in different teaching place through the wisdom and power of curriculum resources development subjects. Altogether, they serve curriculum development and effective teaching.

2.1 Practical Platform of Curriculum Resources Effective Development

With the gradual deepening of new curriculum implementation in our country, activities become more and more popular among teachers in the level of school, such as school-based curriculum development, school-based instruction research and school-based teachers advanced study. All of these activities platform form important spots of curriculum resources effective development and utilization.

The core of school-based curriculum development lays on developing relevant curriculum to promote effective teaching according to the reality in schools; the core of school-based instruction research lays on solving problems that teachers meet in teachers' instruction and improving teaching practice effectively to promote students' effective study; the core of school-based teachers advanced study lays on changing ways to teachers' effective study and indirect instruction. These three activities including serving reorganizing, rebuilding and creation of teaching process, connect with and depend on each other. Please read the following figure 2.
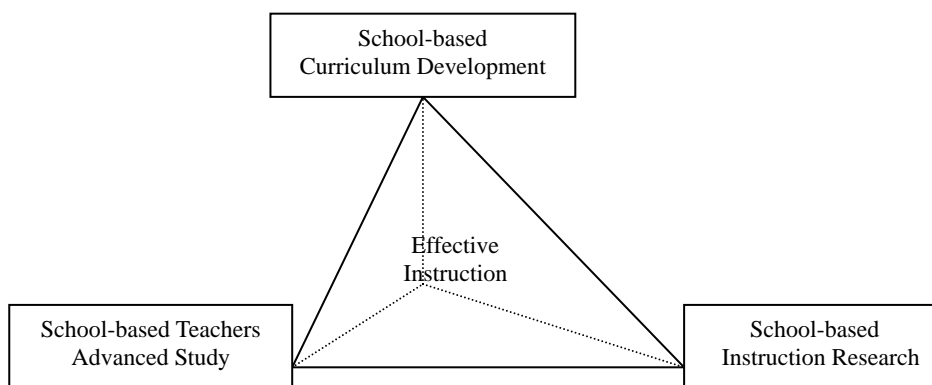

Figure 2 Platform Frame of Curriculum Resources Effective Development

In the above-named platform frame, the curriculum resources effective development of school-based curriculum development, school-based instruction research and school-based teachers advanced study activities form compound forces to promote the occurrence of teachers' effective instruction.

Effective teaching becomes reality at last. The inherent logic is to promote organic combination of effective instruction, research and study during the process of curriculum resources development in the practical platform of schools. Instruction means research, research means study, research means instruction. They are helpful and beneficial to each other. So, teachers' education wisdom can be changed in essence. Also, teachers' educational way and style can be changed. Finally, students can study effectively while teachers can instruct effectively. In fact, that is the ideal curriculum resources effective development. Please read the following figure 3.
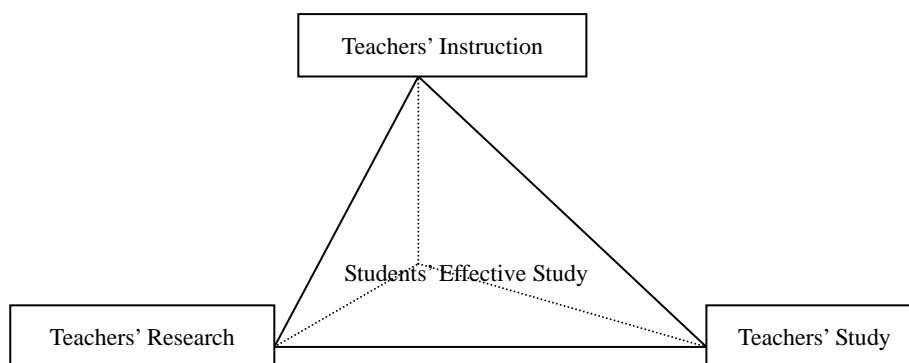
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                        ┌──────────────────────┐
                        │ Teachers' Instruction │
                        └──────────────────────┘


                          Students' Effective Study

┌────────────────────┐                        ┌──────────────────┐
│ Teachers' Research │                        │ Teachers' Study  │
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Figure 3   Ideal of Curriculum Resources Development

2.2 Strategy of Curriculum Resources Effective Development

According to the platform of school-based curriculum development, school-based instruction research and school-based teachers advanced study activities; curriculum resources effective development has its respective operation strategy to serve effective teaching.

2.2.1 Developing curriculum resources effectively in school-based curriculum development activities

Under the direction of curriculum outline or standard established by nation or region, school-based curriculum development occurs and develops on the spot of school. On the basis of the nature, character and usable resources, it means all kinds of development activities launched by voluntary, independent school members or groups with individual researchers out of school. Its aim is to satisfy all the needs of students in school. [10] In fact, the process of school-based curriculum development itself is the process of evaluating and utilizing curriculum resources. The main specific strategies include:

First, make use of SWOT analysis technology, evaluating curriculum resources systematically and elaborating advantages, disadvantages, chances, threat of the-in-curriculum or the-out-of-curriculum resources existing in school-based curriculum development activities, to find basic way of effective development.

Second, investigate the current development foundation, interests, and discrepancy of students and finding the distance from the current curriculum to students' needs of full-scale and harmonious development.

Third, establish educational needs of students.

Fourth, settle objectives and means of curriculum resources development.

Fifth, select curriculum resources on the basis of school educational philosophy, psychological and social theory.

Sixth, exploit valuable proper materials, plans or activities for students.

Seventh, reflect the effect of curriculum resources development and generating improving measurements.

When making use of resources to develop school-based curriculum, we need to reinforce creative national curriculum implementation, including exploiting legal teaching materials for a second time. It means we should reasonably and essentially select, adjust, revise, rearrange and create nation-censored teaching materials. During this process, resources of students' experiences, real lives, social events, folkways and natural scenery will associate with teaching materials, the kind of legal resources in different degrees. A good teacher should know how to integrate and utilize teaching materials, according to the kind of curriculum resources. "When a good teacher continues to revise teaching materials, he does a job of adding or reducing, which is to adjust or

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[10] Yuzhen Xu. (2002). Curriculum Integration in the Level of School, *Curriculum, Teaching Material and Method.* Vol.4

supplement national curriculum."[11] "School-based curriculum", "school-based teaching materials" should occur after teachers exploit legal teaching materials for a second time, but not on the contrary. We should not create curriculum only for curriculum, nor create teaching materials only for themselves. This is the teacher's responsibility and basic premise for effective teaching.

2.2.2 Resources development in school-based teaching research activities

As we all know, there are three key elements in school-based teaching research, which are experts' direction, mutual help of companions and personal reflection. In essence, this emphasizes that we should make good use of the-out-of experts resources and companions resources in or out of schools to form "professional social group" in the process of teaching research.

We should put individual teacher into research group to develop dialogue and self-reflection continuously, finally sublimate rational recognition towards instructional process.

There are some requirements for curriculum resources effective development in school-based teaching activities.

First, analyze the problems in school/ teachers' instruction research to disclose major needs.

Second, investigate professional personage, and finding experts resources concerning research requirements.

Third, change the mode of discipline group to prepare for class, and realizing dialogue across disciplines to form "professional social group".

Fourth, make a research on micro problems in the process of instruction.

Fifth, design effective activities for students, and promoting effective association among students.

Sixth, create supportive culture atmosphere.

Seventh, encourage the reflection on the effect of resources development in time, and expressing them in public via network and periodical publications.

The process of curriculum resources development in school-based teaching research activities is a kind of process of full exploitation and making effective use of resources, centering on the finding and solving teaching problems. In fact, it has always been beyond development and advantage of expert resources and companion resources. Students, parents and social professional personages also play important roles in the process. Resources elements of network, periodical publications, associations, social lives and students' activities are involved into it by various means and opportunities.

2.2.3 Resources development in school-based teachers advanced study activities

Curriculum development means teachers' professional development. Promoting teachers' professional development has always been the core task for curriculum teaching reform. At present, there are some terms like "school-based teachers' training", "school-based teachers' professional development", and "school-based teachers advanced study" during new curriculum implementation. All of them are kind of form to promote teachers' professional development. Through these activities, curriculum resources can be developed and utilized effectively. The main strategies are as follows:

First, make it clear that demands required for teachers' professional development.

Second, reflect the distance from teachers' original knowledge and experience to the new requirements.

Third, establish objectives and contents of professional development.

Fourth, improve teachers' professional attainment through solving micro problems in teaching.

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[11] Lianghua Liu. (2005). Trademark Curriculum and School. *Headmaster Reading Periodical.* Vol.10

Fifth, build platform of dialogue to communicate widely; for example, making use of the organizations like "curriculum reform forum", "position advanced study class" and "academic saloon" to inquire the process of finding and solving problems, sharing experiences and posing new questions.

Sixth, construct supportive school culture.

Seventh, encourage teachers' meaningful reflection.

In the school-based teachers' advanced study activities, resource elements in curriculum resources system can be developed and combined. Teachers' and companions' experiences, rational understanding, the-out-of experts wisdom, students' opinions about teachers' instruction, stories occurred during association between students and teachers, school culture's construction and network resources, can be well developed and utilized. As is shown in the following figure 4, one elementary school in Shenzhen city establishes clear core values and joint objectives under the theoretical direction of university scholars. The school construct supportive school culture, with the joint wish, that is, how to achieve unanimous instruction. As a result, the staff here becomes active. In this kind of school culture atmosphere, professional group is formed, beyond traditional limitation of communication places, like office and department. All the teachers in the school have a public and critic discussion on teaching theory and practice. In order to realizing conception reconstructed through theory direction, and structure rebuilding through professional group, as well as culture regenerated through school culture, it is necessary to awake teachers' subjective consciousness and function of their taking initiative. Practice proves that teachers who develop profession more rapidly always continue to have meaning reflection. [12]

Meanwhile, figure 4 shows that there are common elements among school-based teachers advanced study, school-based teaching research and school-based curriculum development activities. This explains that there is connection among these three activities. Although they can be distinctive respectively during research, they appear in the form of fusion in practice and actually belong to one entirety.
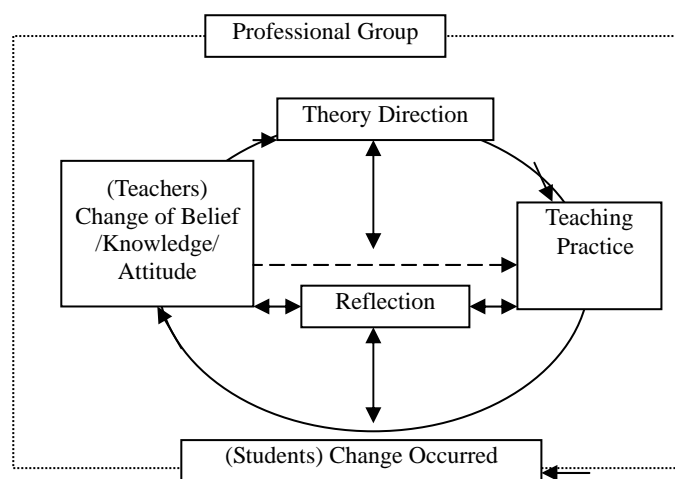

Figure 4　Mode of Teachers' Professional Development under Theory Direction of One Elementary School in Shenzhen City

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[12] The material provided by Houhai elementary school, Nan Shan district, Shenzhen city, and was partly changed.

2.2.4 Resources developments in effective teaching activities

In the process of effective teaching activities, people make use of study problems, teaching events, study phenomenon and teachers' education intellect occurred in human resources, network resources, community resources and class to serve teaching. And people accumulate a lot of experiences. The main means to make use of resources include: solving realistic problems, comprehensive study activities, students' association activities, designing a bunch of practical activities and effective teaching contents, etc. It is unnecessary to talk about them any longer here. [13] However, some practical teachers who engage in teaching point out many mistakes in making use of curriculum resources. For instance, when developing resources, we should take all the matters into consideration, and lay emphasis on them. We should select valuable resources, yet we cannot choose redundant matters.[14] They remind curriculum resources developers to pay attention to the humane concern in teaching, not to pile resources aimlessly to occupy teaching time nor imitate stiffly. All the opinions have certain enlightenment value towards effective development.

2.3 The Mechanism of Curriculum Resources Effective Development

Early in the 1950s', Tyler, an expert of curriculum theory proposed: "(1) making the best use of resources in schools; (2) reinforcing the-out-of-curriculum; (3) helping students to associate with the-out-of-environment."[15] However, we have been short of these ideas and practice. We lack corresponding policies or regulations, either. We do not understand well the value of curriculum resources development and utilization. All of these restrict curriculum resources development in great degree.

2.3.1 Understanding and communication mechanism

For a long time, sections being separated in schools, departments being isolated, scarce connection between schools and society, families asking schools for more demands than concern, they have serious effects on curriculum resources effective development. Therefore, effective communication mechanism among sections, between schools and communities, schools and families, becomes important safeguard of curriculum resources development and utilization.

First, the principle of running school should be sublimated to establish joint prospect. "Understanding means grasping one entirety with ration. (Including version and background, part and whole, multi-factors and one entirety)"[16] This principle can help school members to construct joint pursing and set up collective and entire mind. It also can help community personages to establish the thought of "being proud of school". Hence, they will regard the honor of school as the community's, and establish the entire idea of "School is a part of community". Overall outlook or overall awareness is the premise for better understanding and communication.

Second, it's necessary to design meaningful activities to attract school members to involve in, realize the assimilation of "he" and "me" to reach mutual recognition and understanding in specific scene and situation. And Use understanding to promote communication, such as "There must be the process of changing feeling, assimilation and projection during understanding. Mutual understanding always exists between subjects, needing

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[13] Shuiping Zhu. (2006). Recognition Mistakes Area in Curriculum Resources Development and Changing Strategy. *Education Theory and Practice*. Vol.2

[14] Xiujuan Tang & Weiming Li. (2006). Cold Thinking of "Resources Development". *Teaching Design in Elementary School*. Vol.2

[15] Ralph W.Tyler, translated by Liangfang Shi. (1994). *Basic Theory of Curriculum and Instruction*. Beijing: Peoples' Education Press

[16] Edgar Morin, translated by Yizhuang Chen. (2004). *Complicated Theory and Education Problems.* Beijing: Peking university Press: 75

opening, compassion and tolerance."[17]

Third, making organizations perfect, like Community Education Commission, Parents Commission and School-based Curriculum Development Commission. Coordinate communicative relationship between school and every aspect of community, which can form educational joint power to promote constructing altogether and sharing in resources.

2.3.2 Stimulating and safeguarding mechanism

Curriculum resources effective development depends on a certain stimulating and safeguarding mechanism.

First, divide system of safety responsibilities. During curriculum resources effective development of schools, the issue of safety should not be neglected. On the one hand, without safety, schools will not make good use of resources, nor launch relative resources. On the other hand, when school resources are open to community in public, they will also meet "safety" problems of resources. So, it is necessary to establish some regulations to protect the school resources.

Second, establish mutual-aid legal regulations communicated between school and community. Make their rights and duties clear to promote transforming property rights of community resource via regulations. Make community resources suitable for effective development and utilization by school in time, space, content, running mechanism and management system. In education reform scheme and headmaster qualification regulations, America settles that schools take more responsibilities for community; in Public Secondary School Law, Sweden sets the mutual relationship between school and community, which stimulates the activeness of community and grass-roots school to participate public education.[18]

Third, construct necessary education base. Local government should regard education resources construction as its duty, and build some activity bases and education base to combine school's education plan and real needs. On the one hand, it can improve the utilization efficiency of resources through using them centrally. On the other hand, it may reduce accidents through managing them as the whole.

Fourth, establishing, evaluating and improving internal mechanism of school. Thus teachers can evaluate themselves consciously and autonomously, and continue to reflect different problems occurred in the process of development. Self-criticism, self-stimulation and self-improvement together with all mentioned above can ensure healthy and successful curriculum resources development of community. Therefore, its supportive function for school curriculum can become true and promote more effective students' development to occur.[19]

References (omitted)

(Edited by Dongling Zhang and Qunying Zhou)

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[17] ibid

[18] Songlin Li & Shoujing Huang. (2003). On the Study of Individual Case of Community Curriculum Resources Development. *Educational Science*. Vol. 6

[19] ibid